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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/522,059

01/20/2005

Jun Shinozaki

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RATNERPRESTIA  
P.O. BOX 980  
VALLEY FORGE, PA 19482

EXAMINER

DHINGRA, RAKESH KUMAR

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/522,059	<b>Applicant(s)</b> SHINOZAKI ET AL.	
	<b>Examiner</b> RAKESH K. DHINGRA	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/18/08 has been entered.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1-9 have been considered but are moot in view of the new ground(s) of rejection. Applicant has amended claims 1, 4 by adding new limitations like, "above the substrate" and "spraying a deposition material onto said plasma display panel from below the substrate" etc.

Accordingly claims 1-9 are now pending and active.

New references by Yamazaki et al (US 2002/0132047) and Spahn (US 6,237,529) when combined with admitted prior art reads on amended claims 1, 4 limitations as explained below. Accordingly claims 1, 4 and 8 have been rejected under 35 USC 103 (a) as explained below. Balance claims 2, 3 and 5-7, 9 have also been rejected under 35 USC 103 (a) as explained below.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter

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sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1, 2, 4, 5, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Yamazaki et al (US 2002/0132047) and Spahn (US 6,237,529).**

Regarding Claims 1, 4, 8: Admitted prior art teach a method for manufacturing a substrate comprising:

providing a substrate holder 1 including:

a first frame 2 for holding a substrate 3 of the plasma display panel, said first frame holding the substrate 3 has a protrusion extending from below a bottom surface of the substrate 3 along a side surface of the substrate without being superimposed over the top surface of the substrate; and

a second frame 2 having an opening, the protrusion between the substrate and the opening being such that the substrate 3 is on one side of the protrusion and the opening is on the other side of the protrusion and situated adjacent to the first frame 2; and

providing the plasma display panel 3 which is held by the substrate holder 2 for deposition;

spraying a deposition material onto said plasma display panel from below the substrate of the plasma display panel (e.g. Figs. 9(a), 9 (b) and page 2, line 11 to page 3, line 5). Further, the method shall obviously permit an additional amount of the deposition material to flow through opening 4 (where no substrate is installed) from below the substrate.

Admitted prior art does not explicitly teach that the protrusion extends to a height above the substrate and is greater than a height of the substrate.

Yamazaki et al teach a method of film deposition on a display panel comprising a deposition chamber 101, a crucible 108 and a substrate holder 104 with a protrusion for holding a substrate 105 on which a film is to be deposited. Yamazaki et al further teach that the protrusion on the substrate holder extends to a height above the substrate and is greater than a height of the substrate (e.g. Fig. 1 and para. 045-0050).

Spahn teaches a method for film deposition on a display panel comprising a deposition chamber 206, a source 10 with a baffle 30 disposed below the aperture 22 of the source, a substrate holder 106 for holding a substrate 102. Spahn further teach the substrate holder 106 has a protrusion that extends to a height greater than a height of the substrate 102. Spahn also teach that dimensions of the baffle member 30 (including distances "m" and "b" in Fig. 5) is optimized to allow maximum probability of the exit of vapor while minimizing the chances of the exit of particulates of the deposition material towards the substrate 102 (e.g. Figs. 1-5 and col. 4, line 10 to col. 10, line 60). Since the frame with opening would be like a baffle surrounding the substrate to be coated, it would be obvious to optimize the height of the protrusion of the substrate holder

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(in the apparatus of admitted prior art in view of Yamazaki et al, as per teaching of Spahn to control passage of particulates of the deposition material towards the substrate.

Therefore it would have been obvious to one of ordinary skills in the art at the time of the invention to optimize the height of the protrusion of the substrate holder as taught by Spahn in the apparatus of admitted prior art in view of Yamazaki et al, control passage of the particulates of the deposition material towards the substrate.

In this connection the courts have ruled:

It would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding Claims 2, 5: Admitted prior art in view of Yamazaki et al and Spahn teach the height of protrusion is optimized (as already explained above under claims 1, 4) to control passage of particulates of the deposition material towards the substrate.

**Claims 3, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Yamazaki et al (US 2002/0132047) and Spahn (US 6,237,529) as applied to Claims 1 , 2, 4, 5, 8 and further in view of Hiroki et al (US 5,374,147).**

Regarding Claims 3, 6: Admitted prior art in view of Yamazaki et al and Spahn teach all limitations of the claim including substrate holder (frame) 1 for holding substrate, but do not teach holding means including supporting means and positioning means.

Hiroki et al teach an apparatus and method for supporting a substrate 2 by a frame 73 and where the frame comprises support means 88 and positioning means (83, 84 with stoppers 85, 86) for positioning the substrate 2 in a planar direction, wherein the substrate is held by fitting the substrate to the

positioning means (83-86) and placing the substrate on the support means 88 (e.g. Fig. 12 and col. 10, lines 13-63).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use frame with support means and positioning means as taught by Hiroki et al in the apparatus and method of Admitted prior art in view of Yamazaki et al and Spahn to ensure correct positioning of the substrate.

**Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Yamazaki et al (US 2002/0132047) and Spahn (US 6,237,529) as applied to Claims 1, 4, 8 and further in view of Won et al (US 6,355,108).**

Regarding Claim 7: Admitted prior art in view of Yamazaki et al and Spahn teach all limitations of the claim including first frame 1 for holding substrate, but do not teach first frame includes a plurality of tabs separated from each other which extend below the bottom surface of the substrate.

Won et al teach a deposition apparatus and method comprising a frame 22 with plurality of tabs 26. Won et al also teach that the tabs 26 support the substrate 28 on the deposition face and are shaped to accommodate the substrate 28, and comprise protruding contact surfaces for stabilizing a substrate on a support member during processing (e.g. Fig. 3, 4 and col. 5, line 25 to col. 6, line 35) [since applicant's specification does not explicitly describe any "tab", examiner has interpreted that the plurality of tabs as claimed refer to "Support 6a" in Fig. 6 – applicant is invited to confirm this]. Further, though, Won et al do not explicitly teach the tabs extend below the bottom surface of the substrate (during processing), the tabs 26 as taught by Won et al would obviously extend below the substrate in case frame 22 was used upside down with a deposition source disposed below the substrate.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the first frame with a plurality of tabs as taught by Won et al in the apparatus and

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method of Admitted prior art in view of Yamazaki et al and Spahn to stabilize the substrate on the frame during processing.

**Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Yamazaki et al (US 2002/0132047) and Spahn (US 6,237,529) as applied to Claims 1, 4, 8 and further in view of Yang et al (US 6,397,776).**

Regarding Claim 9: Admitted prior art in view of Yamazaki et al and Spahn teach all limitations of the claim except the protrusion curves away from the substrate.

Yang et al teach a method for deposition on a substrate comprising a two source array 15 for deposition on substrate 12. Yang et al further teach that a curved substrate holder is used for simulating curved surfaces for curved substrates (e.g. Fig. 1 and col. 10, lines 1-15). It would be obvious to use substrate holder with a protrusion that curves away from the substrate as per teaching of Yang et al to enable support substrates with curved surfaces.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the substrate holder with a protrusion that curves away from the substrate as taught by Yang et al in the apparatus and method of Admitted prior art in view of Yamazaki et al and Spahn to enable support substrates with curved surfaces.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAKESH K. DHINGRA whose telephone number is (571)272-5959. The examiner can normally be reached on 8:30 -6:00 (Monday - Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571)-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rakesh K Dhingra/  
Examiner, Art Unit 1792

/K. M./  
Primary Examiner, Art Unit 1792